

**Amendment and Response**

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Serial No.: 10/564,102

Confirmation No.: 7195

Filed: June 19, 2006

For: DENTAL COMPOSITION COMPRISING ETHYLENE IMINE COMPOUNDS AND NON-REACTIVE ACCELERATORS

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**Remarks**

The Office Action mailed April 29, 2009 has been received and reviewed. Claims 1, 8, and 11-14 having been amended, and claim 5 having been cancelled, without prejudice, the pending claims are claims 1-4 and 6-15. Reconsideration and withdrawal of the rejections are respectfully requested.

**The 35 U.S.C. §112, Second Paragraph, Rejection**

The Examiner rejected claim 8 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner objected to certain Markush language. Amendment has been made to clarify the claim, thereby rendering the rejection moot.

**The 35 U.S.C. §102 Rejections**

The Examiner rejected claim 14 under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Eckhardt et al. (U.S. Patent Publication No. 2003/0153726 A1). Claim 14 having been amended, this rejection is rendered moot.

The Examiner rejected claims 1-4, 6, 7, 9, 10, and 13-15 under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Zech et al. (U.S. Patent No. 6,894,144). Independent claims 1 and 14 having been amended to incorporate the language of claim 5, which was not subject to this rejection, this rejection is rendered moot.

The Examiner rejected claims 1-4, 6, 7, 9, 10, and 13-15 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Zech et al. (WO 01/17483). Independent claims 1 and 14 having been amended to incorporate the language of claim 5, which was not subject to this rejection, this rejection is rendered moot.

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**The 35 U.S.C. §103 Rejections**

The Examiner rejected claims 1-15 under 35 U.S.C. §103(a) as being unpatentable over Eckhardt et al. (U.S. Patent Publication No. 2003/0153726 A1) in view of Schmitt et al. (U.S. Patent No. 4,167,618). Independent claims 1 and 11-14 having been amended to incorporate the language of claim 5, this rejection is rendered moot.

Insofar as this rejection applies to the presently pending claims, it is respectfully traversed. As currently claimed, each of the independent claims incorporates a compound having an SO<sub>2</sub>-NH group, wherein the compound is selected from the group consisting of N-alkyl or N-aryl substituted aryl sulfonic acid amides and N-alkyl or N-aryl substituted alkyl sulfonic acid amides. Neither of the cited documents discloses a dental composition comprising a SO<sub>2</sub>-NH group-containing component as recited in the presently pending claims.

Eckhardt et al. do not specify the amides which might be used as inert diluents. There is no disclosure that the amides have to comprise a SO<sub>2</sub>-NH group. The phrase "amides of alkylsulfonic acids and arylsulfonic acids" does not only comprise amides having a SO<sub>2</sub>-NHR group, but also amides comprising a SO<sub>2</sub>-NH<sub>2</sub> group or a SO<sub>2</sub>-NR<sub>2</sub> group, wherein R is different from H.

There is no teaching or suggestion of any advantage provided by the claimed compounds in Eckhardt et al. It has been found that by incorporating aryl sulfonic acid amide or alkyl sulfonic amide as presently claimed into the polyether containing composition, the setting speed can be enhanced. Thus, the amides used are not inert in the sense they are described by Eckhardt et al. (at paragraph [0049] it is stated "... or amides of alkylsulfonic acids and arylsulphonic acids used as inert diluent," emphasis added). An inert diluent typically does not have any effect on the reaction speed.

Thus, in order to arrive at the claimed subject matter, the person skilled in the art has to make the following selections: (1) identify from the group of possible compounds suggested as inert diluents the esters or amides of alkylsulfonic acids and arylsulfonic acids; (2) select the amides and not the esters of said acids; and (3) select the compounds having an SO<sub>2</sub>-NH group.

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wherein the compound is selected from the group consisting of N-alkyl or N-aryl substituted aryl sulfonic acid amides and N-alkyl or N-aryl substituted alkyl sulfonic acid amides. By using these particular substances, it has been observed that the speed of set can be improved (that is, providing a dental composition with a shorter working time). Experimental evidence of this effect (showing that sulfonamides with a  $\text{SO}_2\text{-NRR}'$  ( $\text{R} = \text{alkyl}$ ,  $\text{R}' = \text{alkyl}$ ) group do not accelerate the speed of cure in the same manner than sulfonamides with a  $\text{SO}_2\text{-NHR}$  group) is provided herewith in the Declaration of Dr. Thomas Klettke.

In order to obtain this advantage (shorter working time; more rapid curing) Eckhardt et al. suggest adding an antacid-acting compound selected from the group of oxides, hydroxides . . . (see, for example, paragraphs [0023] and [0036]). This, however, is a completely different class of materials. There is no suggestion or motivation for the skilled person to focus on the amides claimed in the present invention.

Schmitt et al. do not provide that which is missing from Eckhardt et al. Withdrawal of this rejection is respectfully requested.

The Examiner rejected claims 1-11 and 13-15 under 35 U.S.C. §103(a) as being unpatentable over Zech et al. (U.S. Patent No. 6,894,144 or WO 01/17483). Independent claims 1, 13, and 14 having been amended to incorporate the language of claim 5, this rejection is rendered moot.

Insofar as this rejection applies to the presently pending claims, it is respectfully traversed. As currently claimed, each of the independent claims incorporates a compound having an  $\text{SO}_2\text{-NH}$  group, wherein the compound is selected from the group consisting of N-alkyl or N-aryl substituted aryl sulfonic acid amides and N-alkyl or N-aryl substituted alkyl sulfonic acid amides. The cited document does not disclose a dental composition comprising a  $\text{SO}_2\text{-NH}$  group-containing component as recited in the presently pending claims. Zech et al. do not specify the amides which might be used as inert diluents. There is no disclosure that the amides have to comprise a  $\text{SO}_2\text{-NH}$  group. The phrase "amides of alkylsulfonic acids and

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arylsulfonic acids" does not only comprise amides having a  $\text{SO}_2\text{-NHR}$  group, but also amides comprising a  $\text{SO}_2\text{-NH}_2$  group or a  $\text{SO}_2\text{-NR}_2$  group, wherein R is different from H.

There is no teaching or suggestion in Zech et al. that selecting such compounds would provide any advantage. As discussed above, it has been found that by incorporating aryl sulfonic acid amide or alkyl sulfonic amide as presently claimed into the polyether containing composition, the setting speed can be enhanced. Thus, the amides used are not inert in the sense they are described by Zech et al. An inert diluent typically does not have any effect on the reaction speed.

Thus, in order to arrive at the claimed subject matter, the person skilled in the art has to make the following selections: (1) identify from the group of possible compounds suggested as inert diluents the esters or amides of alkylsulfonic acids and arylsulfonic acids; (2) select the amides and not the esters of said acids; and (3) select the compounds having an  $\text{SO}_2\text{-NH}$  group, wherein the compound is selected from the group consisting of N-alkyl or N-aryl substituted aryl sulfonic acid amides and N-alkyl or N-aryl substituted alkyl sulfonic acid amides. By using these particular substances, it has been observed that the speed of set can be improved (that is, providing a dental composition with a shorter working time). Experimental evidence of this effect (showing that sulfonamides with a  $\text{SO}_2\text{-NRR}'$  ( $\text{R} = \text{alkyl}$ ,  $\text{R}' = \text{alkyl}$ ) group do not accelerate the speed of cure in the same manner than sulfonamides with a  $\text{SO}_2\text{-NHR}$  group) is provided herewith in the Declaration of Dr. Thomas Klettke.

Withdrawal of this rejection is respectfully requested.

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**Summary**

It is respectfully submitted that the pending claims 1-4 and 6-15 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives at the telephone number listed below if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

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**CERTIFICATE UNDER 37 CFR §1.8:**

The undersigned hereby certifies that this paper is being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 14<sup>th</sup> day of July, 2009, at 4:35 pm (Central Time).

By:

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